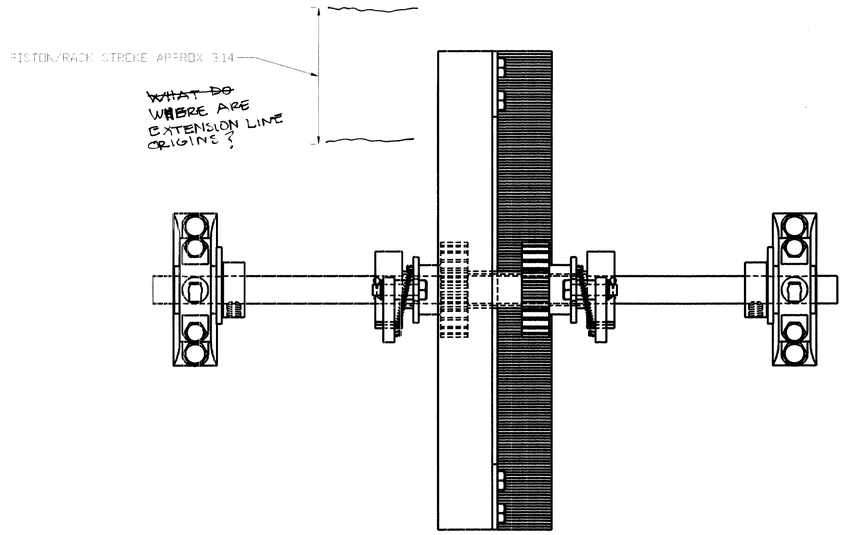
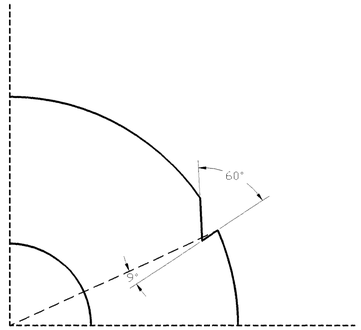


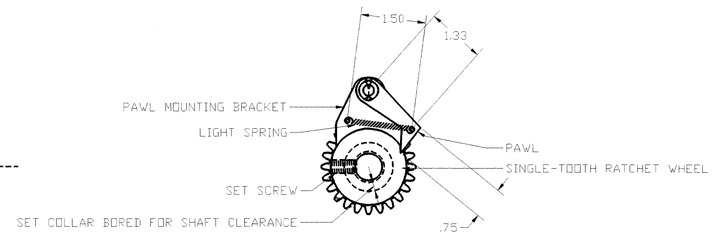
TOP VIEW

NOTES:

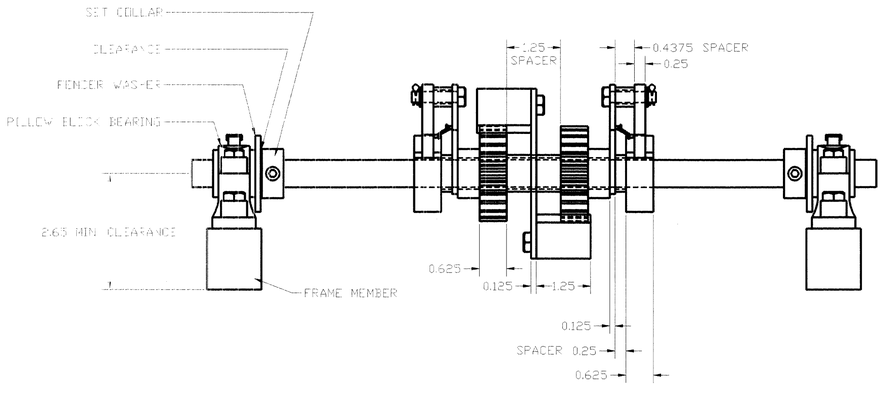
1. THE TEETH OF THE TWO RACKS DON'T HAVE TO LINE UP AS THEY ARE SHOWN HERE.
2. NYLON PINION GEAR IS BORED TO TURN FREELY ON 0.625" SHAFT.
3. PAWL MOUNTING BRACKET AND SPACER ARE FIXED TO PINION SO AS TO TURN WITH IT.
4. SPACER AND BRACKET ARE BORED FOR CLEARANCE FROM SHAFT.
5. SET SCREW IN RATCHET WHEEL FIXES WHEEL/BRACKET/PAWL ASSEMBLY TO SHAFT.
6. SHAFT IS TURNED IN ONE DIRECTION BY PAWLS, WHICH ARE ALTERNATELY DRIVEN BY THE RACKS IN TURN.
7. PINION GEAR PITCH DIAMETER = DESIRED PISTON STROKE X 2 / π
8. PARALLEL RACK SPACING = PINION O.D. + (2 X [0.157 / (NO. OF PINION TEETH / PITCH DIA.)])
9. SHAFT SPACERS CAN BE MADE FROM PVC PIPE FOR LIGHT TEST DUTY.
10. 2.65 MIN. CLEARANCE (SIDE VIEW) IS FOR PAWL ASSEMBLY ROTATION
11. LINEAR BEARINGS FOR RACK TRAVEL ARE NOT SHOWN.
    RODS CAN BE ATTACHED TO A FRAMEWORK ABOVE/BELOW THE RACKS,
    WITH LINEAR BALL BEARINGS ATTACHED TO RACKS AND RUNNING ON THE RODS.



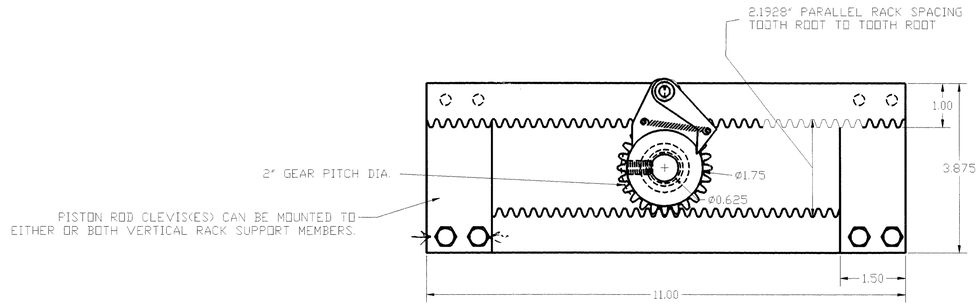
RATCHET TOOTH DETAIL
SCALE: 3" = 1"



RATCHET/PAWL/MOUNTING BRACKET ASSEMBLY



SIDE VIEW



END VIEW

SHAFT BEARINGS NOT SHOWN IN THIS VIEW

	SCALE: .500" = 1"
TORQUERACK CRANKSHAFT SUBSTITUTE FOR HOMEMADE AIR ENGINES	DRAWING NO.: 27-99-DWG
PNEUMATIC OPTIONS 1430 Willamette Street #561 Eugene, Oregon 97401	DRAWN BY: Scott Robertson
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